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Cover: World telecom spending plans hit $79.2 billion, p.38

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Cover art by Leon Denlovics

A look at world telecom spending reveals that while total spending is a healthy sum, there is no doubt that sovereign nations are concerned more with inflation than growth. Weighing the budgets against the erosion of inflation reveals that only a few nations will stay even.

1985 world telecom spending—a struggle to stay even

CZATDANA INAN, MARKET RESEARCH DIRECTOR, and DEL MYERS, EDITOR

Table 1

Common carriers world telecommunications spending: 1983-1985 ($000,000)

Zone	Region	Spending in Current US$			IF Spending Had Increased 6% Annually in 1983 US$*	
		1983	1984	1985	1984	1985
1	North America	23,361	24,964	27,014	25,679	28,227
2	Africa	1,963	1,852	1,670	2,157	2,372
3-4	Europe	22,625	21,945	21,967	24,870	27,337
5	South & Central America	2,549	2,595	2,936	2,802	3,080
6	South Pacific	3,275	2,848	3,870	3,600	3,957
7	USSR	6,000#	6,400#	6,750#	6,595	7,250
8	Far East	11,433	11,383	11,637	12,567	13,814
9	Middle East	3,487	3,230	3,349	3,833	4,213
		74,693	75,217	79,193	82,104	90,250

* assumes 3.7% inflation annually, based on US GNP deflator (1984)
\# extrapolated

THE WORLD's 1985 telecommunications spending plans mirror the state of the world's economy and the collision of priorities within and between nations.

In developed countries, balancing the conflicts between procurement, industrial policy and non-tariff protectionism requires diplomatic skills far beyond those needed to simultaneously balance tea and cake.

In the under-developed and developing countries, declining raw material prices and high interest rates continue to frustrate their hopes and optimistic plans. For some nations, the loans that were rescheduled during the financial crises of 1981-1983 are coming due in today's earnings; for others, the choice often comes down to food, not phones.

The $79.2 billion world spending plans (Table I) reflect tight management controls at companies and PTT administrations throughout the world.

For comparison, Table I also provides an interesting contrast: The three left-hand columns contain the real-world data furnished to TELEPHONY by the companies and PTTs responsible for the major share of the expenditures. The two right-hand columns show what the figures would have to be to match forecasts which assert that world telecom capital expenditures are growing annually at a rate of 6% or more, expressed in 1983 dollars.

And the data furnished to TELEPHONY is uniquely current. More than 80%—38 of the 43 non-North American carrier expenditures (Table 2, Column A)—are based on verified reports made in January 1985. Some reports were made less than two weeks prior to the date of this issue of TELEPHONY.

The exchange rates (Column C) correspond to U.S. Federal Reserve system rates on the first business day of the year—the same rates that apply to cable transfers payable in foreign currency. The inflation rate of 3.7% (Column B) corresponds to the increase in the U.S. gross national product deflator for 1984.

This methodology is necessary, because the U.S. dollar is the world's main trading currency and main currency reserve. The $79.2 billion world spending forecast is, therefore, a bottom-line figure that can be inflated or deflated to suit various perceptions of monetary value. Venezuela's devaluation, for example,

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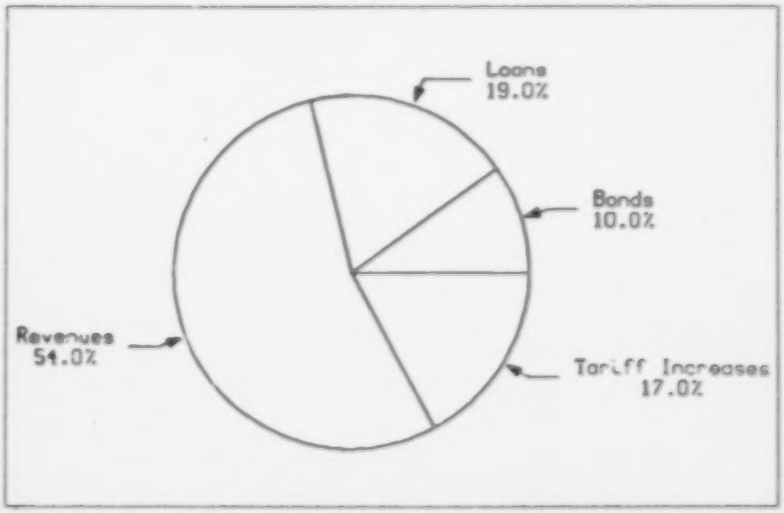

FIG. 1 *Korea's budget funding for 1982-1986 (U.S. $6.547 billion).*

Table 2

1983-1985 world construction expenditures ($000,000)

1/1/84 Equipped Lines	% in Serv		Current US$ (a) versus IF 6% Increase in 1983 Constant US$ (b)							
			(a) Spending in Current US$			(b) IF Budgets Increased 6% Annually in Constant 1983 US$*		Monetary Units = US$ 1		
			1983	1984	1985	1984	1985	1983	1984	1985
		Zone 1: NORTH AMERICA								
		United States						1.000	1.000	1.000
99,950.0	89%	BHCs/RBOCs	12,605.0	13,053.0	14,177.0	13,955.7	15,230.4			
27,660.0	96%	Independents(a)	5,128.0	4,954.0	5,439.0	5,636.8	6,196.1			
na		Interexchange	2,600.0	3,750.0	4,018.0	2,858.0	3,141.5			
		Canada						1.230	1.246	1.323
11,833.0*	89%	Telecom	1,711.2	1,800.0*	1,890.0*	1,881.0	2,067.6			
		Bahamas						1.000	1.000	1.000
29.1	83%	Bahamas Tel	7.0	12.6	13.5	7.7	8.5			
9.4	83%	Grand Bahama	2.0*	2.3	2.5*	2.2	2.4			
216.0	77%	Dominican Rep.	16.0	24.0	30.0*	17.6	19.3	1.000	1.000	1.000
76.0	81%	Jamaica	25.7	29.9	31.3	28.3	31.1	1.811	3.399	4.667
83.0	80%	Trinidad & Tobago(b)	98.2	90.3	101.9	107.9	118.7	2.400	2.400	2.400
139,896.9		KNOWN TOTALS	22,193.1	23,716.1	25,662.8	24,395.2	26,815.6			
		Extrapolated	23,351.0	24,964.0	27,014.0					
		Zone 2: AFRICA								
120.0*	66%	Kenya	36.5	33.3	17.2	40.1	44.1	12.623	13.834	15.824
2,259.0	87%	South Africa	812.0	810.0	750.0*	892.6	981.1	1.074	1.230	2.016
66.0	53%	Zambia	21.3	28.1	37.9	23.4	25.7	0.927	1.464	2.189
103.0*	75%	Zimbabwe	111.6	54.4	44.5	122.7	134.8	0.925	1.132	1.513
2,548.0		KNOWN TOTALS	981.4	925.8	849.6	1,078.8	1,185.7			
		Extrapolated	1,963.0	1,852.0	1,670.0					
		Zone 3 & 4: EUROPE								
2,570.0*	85%*	Austria	610.7	561.1	556.0	671.3	737.9	16.710	19.473	22.285
3,275.0	89%	Belgium	347.8	333.3	300.2	382.3	420.2	46.660	56.340	63.580
134.3	75%	Cyprus	22.0	32.8	45.8	24.2	26.6	0.488	0.568	0.651
		Denmark						8.385	9.985	11.337
1,022.0	90%	Jydsk	69.0	79.3	80.3	75.6	83.4			
1,400.0*	89%*	KTAS	73.5	85.9	90.1	80.8	88.8			
		Finland						5.282	5.853	6.617
731.0	75%	PTT	138.2	119.6	130.0	151.9	167.0			
1,752.0	82%	Association	149.4	170.0	190.0	164.2	180.5			
24,412.0	87%	France	4,209.8	3,943.2	3,922.2	4,627.5	5,086.6	6.726	8.445	9.715
27,431.0	86%	Germany FR	4,875.0	5,395.5	5,900.0*	5,398.7	5,890.4	2.374	2.761	3.173
28,416.0	49%	Italy	2,722.0	2,512.0	2,289.0	2,992.1	3,289.0	1272.000	1660.000	1923.000
6,541.0	84%	Netherlands	485.3	414.5	361.7	511.5	562.2	2.624	3.100	3.580
1,700.0*	85%	Norway	442.0	420.5	387.9	485.9	534.1	7.056	7.802	9.170
		Portugal						91.000	133.350	170.750
938.0*	86%	TLP	93.3	79.4	74.4	102.6	112.7			
1,256.0	86%	Spain	1,256.0	1,120.0	1,182.0	1,380.6	1,517.6	128.000	158.000	184.000
6,120.0	82%	Sweden(c)	634.1	580.2	551.2	697.0	766.2	7.294	8.082	9.045
4,000.0*	80%	Switzerland	607.3	587.1	542.6	667.6	733.9	1.994	2.216	2.617
23,400.0*	86%	United Kingdom(d)	2,515.7	2,219.8	2,066.4	2,765.3	3,039.7	0.616	0.700	0.871
135,098.3		KNOWN TOTALS	19,231.0	18,653.2	18,671.6	21,139.1	23,338.4			
		Extrapolated	22,625.0	21,945.0	21,967.0					
		Zone 5: CENTRAL/SOUTH AMERICA								
6,987.0*	88%	Brazil	908.0	844.0	890.0	998.1	1,097.1	292.670	984.000	3184.000
465.0	93%	Chile	39.0	44.0	58.0	42.9	47.1	73.400	87.000	127.120(e)
1,495.0*	89%	Colombia	98.7	90.1	84.2	108.5	119.3	70.250	88.870	112.280
213.0	84%	Costa Rica	45.4	30.0	38.8	49.9	54.9	45.786	43.290	47.837
295.0	90%	Ecuador	50.0*	55.0	44.4	55.0	60.4	67.385	94.410	118.459
3,190.0*	95%	Mexico	236.0	493.4	720.8	259.4	285.2	139.000	170.900	227.000
184.0	70%	Peru	61.1	38.0	21.6	67.2	73.8	886.900	2276.830	6133.000
275.0*	85%	Uruguay	43.6	48.6	46.0	47.9	52.7	34.091	42.963	74.755
1,438.0	70%	Venezuela	200.2	209.3	250.2	220.1	241.9	4.300(f)	4.300(f)	4.300(f)
14,512.0		KNOWN TOTALS	1,682.0	1,812.4	2,114.0	1,8490	2,032.4			
		Extrapolated	2,549.0	2,595.0	2,926.0					
		Zone 6: SOUTH PACIFIC								
6,500.0*	86%	Australia	1,538.2	1,283.8	1,544.9	1,630.8	1,858.6	1.009	1.396	1.246
		Indonesia						680.250	996.000	1077.889
685.0*	89%	Perumtel	168.9	99.2	482.4	185.7	204.1			
na		Indosat	38.0	39.0	40.0*	41.8	45.9			
1,204.0	92%	New Zealand(g)	137.9	146.7	160.0	151.6	166.6	1.265	1.540	2.131
		Philippines						9.094	14.050	17.590
471.4	80%	PLDT(h)	425.6	280.4	245.0	467.8	514.2			
980.0	72%	Singapore	164.7	208.2	178.6	181.0	199.0	2.100	2.138	3.189
630.0	82%	Thailand	147.0	220.9	444.5	161.6	177.6	23.000	23.040	27.200
10,590.4		KNOWN TOTALS	2,630.3	2,278.2	3,095.4	2,880.3	3,166.0			
		Extrapolated	3,275.0	2,848.0	3,870.0					

Table 2 (continued)
1983-1985 world construction expenditures ($000,000)

1/1/84 Equipped Lines	% in Serv		Current US$ (a) versus IF 6% Increase in 1983 Constant US$ (b) (a) Spending in Current US$ 1983	1984	1985	(b) IF Budgets increased 6% Annually in Constant 1983 US$# 1984	1985	Monetary Units = US$ 1 1983	1984	1985
		Zone 8: FAR EAST								
1,870.0	83%	Hong Kong	82.9	86.0*	110.0	91.1	100.2	6.490	7.799	7.826
50,288.0*	85%*	Japan	7,328.0	7,313.0	7,290.0*	8,055.1	8,854.3	232.000	232.450	251.800
5,358.0	90%	Korea, Rep (i)	1,309.0	1,309.0	1,309.0	1,438.9	1,581.6	747.850	800.150	829.500
5,386.0	72%	Taiwan	426.2	388.2	600.0	468.5	515.0	39.000	40.200	39.500
62,902.0		KNOWN TOTALS	9,146.1	9,106.2	9,309.0	10,053.6	11,051.1			
		Extrapolated	11,433.0	11,383.0	11,637.0					
		Zone 9: MIDDLE EAST								
80.0*	65%	Bahrain	22.0	24.0*	25.4*	24.8	27.3	0.381	0.376	0.377
1,542.2	70%	Iran	700.0*	750.0*	799.9	769.5	845.8	84.528	89.075	94.352
1,130.0	89%	Israel	200.0	170.0*	150.0*	219.8	241.7	33.730	110.250	663.000
344.0	60%	Kuwait	81.5	120.1	226.8	89.6	98.5	0.289	0.294	0.307
306.9	94%	Syria	44.6	37.7	47.6	49.0	53.9	6.289	7.140	7.880
2,188.0	85%*	Turkey(j)	346.0	190.0*	89.7	380.3	418.1	187.000	304.120	499.450
5,591.1		KNOWN TOTALS	1,394.7	1,291.8	1,349.4	1,533.0	1,685.3			
		Extrapolated	3,487.0	3,230.0	3,348.0					

\# assumes 3.7% annual inflation, based on 1984 increase in US GNP deflator
* estimated by Telephony
na not applicable
(a) includes Puerto Rico Telephone
(b) development program underway projects 343,000 lines by 1987; 470,000 by 1993
(c) fiscal year, July-June
(d) capital expenditures as reported in prospectus for British Telecom
(e) official rate
(f) preferential rate for public sector debt and essential imports
(g) equipment expenditures only, fiscal (March 31) budget for 1984, 1985 and 1986
(h) PLN lines increased to 471,367 as of 12/31/83 with consolidation of smaller companies (i.e., Retelco, Fitelco, etc.)
(i) based on continuing commitment to $6.5 billion program, assumes spending level and allocations for inflation
(j) investment was 64.7 billion/TL in 1983, up from 37.1 billion/TL in 1982

resulted in a split rate: 4.3 bolivars to U.S. $1.00 for public sector debt and essential imports; 7.5 bolivars, to normal imports and 12.6 bolivars, to luxury imports.

Sovereign nations indeed reserve and exercise the right to define terms and to concentrate on checking inflation or making an extraordinary effort to maintain growth. The following typical examples illustrate how this works out for telecommunications capital expenditures:

- Austria spent AS10.204 million ($610.7 million) in 1983, AS10.927 million ($561.1 million) in 1984 and estimates 1985 spending at AS12.435 million ($588 million.) Six percent real growth would have required 1984 expenditures of AS13.072 million ($671.3 million) and 1985 expenditures of AS16.437 million ($737.6 million.)
- Telebras (Brazil) will maintain expenditures of $850 million to $900 million, although the cruzeiro fell from the 1983 rate of 252.670 per U.S. $1.00 to 3184.0 per U.S. $1.00 on the first business day of 1985. Had Telebras failed to maintain a level of parity, its purchasing power would have fallen from $908 million in 1983 to $72 million in 1985.
- India's Rs26.550 billion program for 1980-1985 equals $2.8 billion in 1983 dollars, $2.5 billion in 1984 dollars and $2.2 billion in 1985 dollars.

For most countries, concern over the health of current accounts has superseded wishful thinking, because deficits must be paid in foreign currency. And the options for generating foreign currency are few. For many developing countries, the main or only source of foreign currency is tourism, but there aren't enough tourists to go around.

For many countries, payments on rescheduled loans will constrain telecommunications spending plans for several years. The World Bank and other development agencies cannot offer salvation. Though the World Bank has never had a default, it enjoys a luxury not available to commercial lenders: No further loans are given until outstanding loans are current. Money for development is, therefore, dependent on commercial lenders and supplier credits. And lenders are cautious, lest they become captive to the borrower.

Those who preside over the telecommunications networks of developing countries also are entering 1985 cautiously. The two factors that influence their telecommunications development, raw material prices and interest rates, are beyond their control.

Depressed earnings offer little hope that the extraction-based economy countries can do more than concentrate on their highest priority projects. Even Saudi Arabia, which has invested some $5 billion in its network, will be taking a closer look at priorities as the need to develop non-oil dependent industrial sectors increases in importance.

Many major projects have been postponed and lower priority projects cancelled as the international debt

Continued on page 45

Table 3
Projected new and replacement lines 1986-1988

PROJECTED NEW & REPLACEMENT LINES 1986-88

	1986	1987	1988
KOREA	1,000,000	1,000,000	1,000,000
TAIWAN	491,000	535,000	550,000
THAILAND	318,000	445,400	302,600
	1,809,000	1,980,400	1,852,600

crisis continues to plague Latin America. At the height of the crisis, the Inter-American Development Bank estimates that total debt for 20 Latin American countries represented 202% of export revenues. Debt service was 53%. The traditional rule of thumb for manageable debt service was 20%. Telecommunications remains high on the development agenda as a support to expansion of the business sector but the fiscal squeeze is on. Brazil has had to divert funds to other sectors and installations have fallen from a peak of 1 million lines annually in the 1970s to about half this number. Chile, too, is hard-pressed to meet its goal of 622,000 lines over 1982-1989. Peru has reorganized its former government agency into a corporation with a mandate to operate as a commercial enterprise. Costa Rica's network ranks among the best in the region: Installation of 50,000 digital lines began in 1984 and the goal is 5% average annual growth.

In Africa, the Republic of South Africa accounts for 43% of the continent's 8 million telephones; Egypt, Kenya, Libya, Morocco, Nigeria, Tunisia and Zimbabwe account for 80% of the remainder.

Falling oil prices interrupted Nigeria's plan to double to 290,000 the number of telephone lines. It has negotiated repayment of $365 million of central office equipment purchases that began in the late 1970s. Payments will be spread over 6 years, with a 2-year grace period that began this year. The PTT does have a tentative agreement to purchase $171 million of switching equipment. It hinges on a loan guarantee by the export credit agency of Italy, where most of the equipment for Nigeria has been manufactured.

Morocco's allocation of $250 million over the 1981-1985 period to achieve its goal of 3 lines per 100 inhabitants by 1990 seems low. But it is significant, given the region's situation. Telephone growth in South Africa has been constrained to 5% annually. It plans to double the trunk line infrastructure by 1988. About 70,000 subscribers were served by digital exchanges by the end of 1984 and teletex is being extended throughout the country.

Collectively, the least developed countries in Africa have approximately 500,000 telephones. Plans call for the number to increase to almost 4 million by the year 2000. Achieving this goal will require average expenditures of $350 million annually through 1983-2000. Emphasis currently is on the interexchange network.

Botswana has on order a $22.5 million digital telephone and radio network. Cameroon will install a $3 million microwave link to establish a backbone trunk network between its southwest and northwest provinces. The Lome (Togo)-based Economic Community of West African States (ECOWAS) is nearing completion of its first major project, Intelcom 1. Four links running from Ghana to Upper Volta, Benin to Upper Volta, Nigeria to Niger and Mali to the Ivory Coast, are expected to be in place this year. The $45 million Intelcom II phase will link Senegal, Gambia, Guinea Bissau and Guinea. Establishing automatic telephone and telex links between the 16 capital cities of

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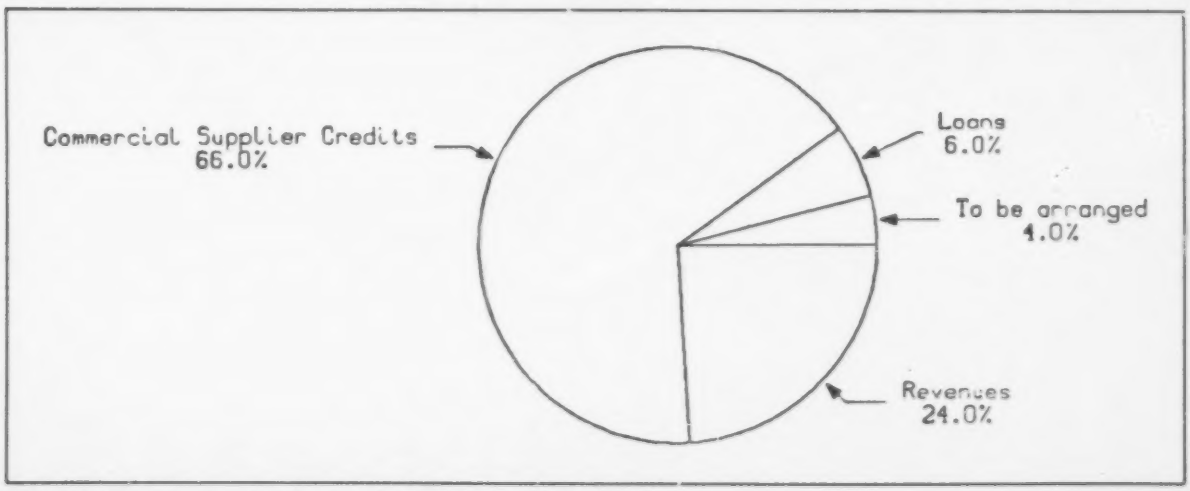

FIG. 2 *Thailand's budget funding for 1986-1990 (U.S. $1.630 billion).*

'. . .funds generated by telecommunications may be diverted to other projects. The priorities in many countries are health and education, water and power utilities and roads.'

the ECOWAS member nations will improve business communications capability and toll revenues.

Toll networks represent a source of foreign currency as well as business communications capability. For example, Philippines Long Distance Telephone, which services the major share of the country's local network, generates 70% of its revenues from toll and 50% of toll from international calls. These dollar earnings help finance large scale projects.

However, funds generated by telecommunications may be diverted to other projects. The priorities in many countries are health and education, water and power utilities and roads. This, combined with tariff structures that do not cover the cost of basic service, does little to encourage the success of proposed self-help, rotating funds for telecommunications development. Such funds, which would be used when traditional sources such as the World Bank are unable to provide loans, would rely on repayment from the future profits of new systems.

The telecommunications problem of the high technology countries is free—or freer—trade. In the United States, the breakup of AT&T has opened up new opportunities for the major supplier-nations of Europe, Asia and North America. The regional Bell operating companies (RBOCs) and their parent organizations, the regional holding companies (RHCs), now are the largest open telecommunications markets in a world where few such markets are truly open to international trade. Naturally, the U.S. is pressuring its major trading partners—like Japan—to reciprocate.

All of the countries with mature telecommunications networks also have to come to terms with liberalization. The relentless pressure to do so comes mainly from the customer that cannot be ignored—the business users. They, of course, are the sources of the most revenue and profit for all carriers.

In the United Kingdom, for example, 300 corporations generate 45% of business user revenues in the country. Nor is the 20/80 rule, where 20% of the customer-base generates 80% of dollars, unique to Britain or the United States. The 900 firms that constitute West Germany's major business user group generate almost a third of the country's telecommunications revenues. These users are the movers and shakers of telecommunications demand.

The United Kingdom also is reaping the benefits of privatization—some $4.7 billion from last year's sale of shares of British Telecom. The government retained 49.8% control of the company and will benefit from future profits and tax revenues. When it was wholly-owned by the government, British Telecom paid no taxes. This year's tax bite will be close to $600 million. Revenues rose to $4.1 billion, up 11% from $3.8 billion the previous first-half. The sale also helped dispel a PTT concern that privatization might leave shares begging in the market. British Telecom's sale was so successful it attracted three times the amount of cash that could be accommodated.

Japan, now committed to the privatization of NTT and substantial liberalization, faces some harsh decisions as the largest national market in the combined Asia-Pacific region and the region's largest supplier. Nippon Telegraph and Telephone's (NTT) expenditures leveled at the Yen 1.7 trillion in 1980. Other countries in the region, such as Australia, Korea and Taiwan, have strong demand and the beginnings of competitive telecommunications manufacturing industries. Hong Kong and Singapore satisfy most of their requirements with imported technology. These two major service centers, however, have very sophisticated requirements and enviable bargaining positions.

The Philippines has embarked on an ambitious program to add 3 million lines to satisfy 100% of demand by the year 2000. The first phase of the program is underway in Metro Manila. Indonesia plans to add 750,000 lines to its network. Malaysia's $254 million 5-year plan ends this year. But the stars of the region are Korea, Thailand and Taiwan, which will add a total of 5,642,000 new lines over 1986-1988. (Table 3).

Taiwan's 25% annual growth rate in the 1970s has leveled out at 12%. The number of lines has increased from 1 million in 1975 to 5.3 million in 1984. 1986-1995 plans call for investment of $2.5 billion (T$100 billion) to cope with continuing strong voice demand and surging demand for data communications. Work has began on realization of the country's ISDN.

Taiwan's development goals include increasing local switch digitization from 1% of 5.8 million lines in 1985 to 31% of the 7.3 million lines projected for 1990; all of the 10 million lines projected for the year 2000 will be digital. Current plans call for installing 400,000 new lines in 1985 and accelerating to 550,000 annually by 1990. Replacement lines will go from 34,000 in 1985 to 321,000 by 1990. By 1990, 82% of the toll switches and 88% of toll circuits will be digital, with 100% digitization by 1998. Approximately 44% of the local trunk circuits will be digital by 1990, with 100% digital capability by the year 2000.

The Korean Telecommunications Authority (KTA) is an outstanding success story. KTA recently began installing 1 million new lines annually, a pace it expects to maintain through 2001, the year it expects to have 22 million lines in service. The current network has 6 3 million lines compared with only 2 million lines in 1978. KTA's $6.5 billion program is

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'Japan, now committed to the privatization of NTT and substantial liberalization, faces some harsh decisions as the largest national market in the combined Asia-Pacific region and the region's largest supplier.'

71% internally-funded; 54% derived from revenues with an additional 17% from revenues earned by tariff increases (Figure 1). It has national priority, investment will account for 7.5% of total government investment over 1982-1988. By comparison, telecommunications investment to total investment averages 3%-4% in continental Europe. Cellular mobile service was introduced in the Seoul area during 1984 and subscribers reached 2700 by the end of the year. Service is expected to be nationwide by 1991. Teletex and videotex will be introduced in 1986. Teletex will be in service with 7000 initial circuits, increasing to 152,000 by 1996 and 544,000 in 2001. Videotex service will increase from 2500 initial circuits to 32,000 by 1996 and 75,000 by 2001. DACOM, a subsidiary of KTA, began commercial data service in 1983 and began offering international electronic mail service in Korean and English during 1984. ISDN plans are underway and fiber optic routes are expected to cover 49% of the trunk network by 1991.

The Telephone Organization of Thailand's (TOT) network has grown to 620,000 lines, although only 50% of expressed demand has been satisfied. At the completion of its 3rd and 4th Telecommunications Project in 1986, digital penetration of switching and transmission facilities will be at the 50% level. The 5th Telecommunications Plans calls for expenditures of $1.6 billion (Figure 2) over fiscal period of 1986-1990 and the addition of 1,066,000 new lines. New service plans include cellular, mobile service for 5000 subscribers by 1986 and a nationwide low speed data service using the public switched network. Videotex plans also are underway to serve some 1200 subscribers in Bangkok. Upon completion of the program, access lines will have increased from 1.69 to 2.71 per 100 inhabitants and the waiting time for new service will have been reduced to 72 months.

These "snapshots" of substantial telecommunications progress in spite of the problems are important: They are the brighter side of the struggle to stay even. And, in every case, progress is directly linked to the priority given telecommunications in a country's development plan. The message is clear: For years to come, telecommunications development will be measured not solely by how much money is available but by how purposefully and wisely available money is spent. □

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